

DESC IRP Stakeholder Advisory Group Planning Meeting

February 16, 2021

Meeting Attendees

- DESC
 - Betty Best
 - Eric Bell
 - Glenn Kelly
 - John Raftery
 - Therese Griffin
 - James Neely
 - Sheryl Shelton
- CRA
 - James McMahon
 - Patrick Augustine
 - Gary Vicinus
 - Robert Kaineg
 - Yuki Zbytovsky
- ICF
 - Drew Durkee
- Advisory Group
 - Will Harlan – Sierra Club
 - Natasha Pauling- SC Association of Community Action Partnerships
 - Maggie Shoher - SACE
 - Indu Manogaran - ORS
 - Hamilton Davis - SCSBA
 - Bret Sowers -SCSBA
 - Anthony Sandonato - ORS
 - Anna Sommer – SCCCL
 - Faith Kitshome – SC Office of Economic Opportunity
 - Eddy Moore - SCCCL

Agenda

- Introductions (30 minutes)
 - Welcome
 - Introductions of CRA and its role
 - Role of the IRP Stakeholder Advisory Group
 - Kick-off meeting roles & Stakeholder feedback process
 - Timeline and cadence of future meetings
- 2020 Modified IRP (1.5 hours)
 - Results of the DSM Rapid Assessment
 - Model selection and Stakeholder Participation
 - Review key inputs from the Commission Order
 - Results and risk assessment

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- Questions
- 2021 & 2022 IRP Updates (30 minutes)
 - Stakeholder process for 2021-2022 DESC IRP Updates, pace and timing of meetings
 - Preview topics for future Advisory Group sessions
 - Approach to building Stakeholder consensus through the Advisory Group
- Next Meeting and Action Items (15 minutes)
 - Key topics for Advisory Group Meeting 2 and Stakeholder “homework”
 - Website & QA logistics

Meeting Notes

Introductions (30 minutes)

Welcome

Ms. Betty Best, who leads the resource planning group, introduced the stakeholders and outlined the agenda for the meeting, which can be referenced above and on slide 1 of the meeting presentation. She expressed that this meeting is more informative in nature but expects that future meetings will be more collaborative, with greater discussion between DESC and stakeholders. Next, she introduced Charles River Associates (CRA) and its role in the stakeholder process. She mentioned that CRA provided a comprehensive review of DESC's 2020 IRP and is familiar with its methods. She introduced Gary Vicinus, James McMahon, Patrick Augustine, and Robert Kaineg from the CRA team.

Introduction of CRA and Its Role

Mr. James McMahon, representing the CRA team, expanded on the responsibilities of CRA in this stakeholder process. He explained that CRA will play an organizational role (assemble relevant materials, manage the Q/A process, coordinate meetings, and record minutes) and act as a facilitator for Advisory Group meetings. CRA will provide their expertise and offer perspectives on industry trends and best practices to assist in the presentation of technical materials and assist in the development of reporting that is due to the commission. He referenced the full list of responsibilities on slide 5.

He expanded that CRA has worked on utility resource planning issues since the 1980s. The firm began as an economic consulting firm but has consistently expanded into strategy projects. Personally, James has worked in the regulatory and utility space for over 20 years and has worked with both investor-owned and public utilities. He then introduced Patrick Augustine, who has experience in resource planning cases and has taken part in numerous stakeholder planning projects across the country. Next, Gary Vicinus comes from a resource planning background and has been involved in many stakeholder engagement processes. Finally, Robert Kaineg will serve as the project manager.

Role of the IRP Stakeholder Advisory Group

While referencing slide 6, Mr. McMahon described the roles of the IRP Stakeholder Advisory Group which are broken down into three main categories: leadership in the process, content development, and meeting facilitation. He detailed the role of DESC, CRA, and the Advisory Group in each category.

Timeline and Cadence of Future Meetings

Next, Mr. McMahon described the timeline and cadence of future meetings. He outlined that the next meeting should be expected in April 2021, and that the 2021 IRP process is delayed for this stakeholder process to unfold. In the next five months, four advisory group meetings are scheduled. These meetings are to be staged each 6-8 weeks in sequence. He noted that the team anticipates continuing engagement after the first four sessions after the IRP is prepared. Mr. McMahon referenced a visual

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representation of the timeline on slide 7.

Kick-Off Meeting Roles and Stakeholder Feedback Process

Finally, Mr. McMahon explained that to ensure this meeting runs as efficiently as possible, the microphones of the Advisory Group were muted throughout the presentations, questions were to be submitted through the chat, and that Advisory Group members would be allowed one follow-up question. He highlighted that, as Ms. Best mentioned, the team expects more opportunities for Q&A in the future.

2020 Modified IRP (1.5 hours)

Results of the DSM Rapid Assessment

Ms. Therese Griffin, Manager of Energy Conservation, led this portion of the presentation. She reviewed the initial rapid assessment process, which engaged ICF in November 2020 to conduct an analysis investigating if DESC's DSM portfolio could be cost effectively expanded and what programs could achieve 1% of energy savings in 2022, 2023, and 2024. The initial rapid assessment focused on recommendations from Dr. David Hill, representing SACE and SCCCL. Additional input was provided by the Energy Efficiency Advisory Group in a meeting on January 19th, 2021, and the rapid assessment subsequently was finalized. Ms. Griffin expressed that the rapid assessment will be appended to the modified IRP and the Advisory Group will be able to see the details there. The previous process is further outlined on slide 12.

Ms. Griffin outlined upcoming processes as well. She mentioned that following the filing of the IRP, DESC will be engaging in the next potential study, which is a more comprehensive evaluation that will seek to identify maximum energy efficiency potential in the service area. The study will be underway by the end of the year, and DESC will be working with the Energy Efficiency Advisory Group with those updates. She then passed the presentation to Mr. Drew Durkee, who conducted the cost-effectiveness testing for DESC's DSM programs. Mr. Durkee has been working with DESC since the inception of the DSM program in 2014. He also provided oversight in the 2019 potential study and the two phases of the rapid assessment.

Mr. Drew Durkee began by delineating the background and history of the rapid assessment. He referenced a timeline of the project on slide 15. He described that the potential study was filed in June 2019, and he outlined the process as it continued to February 2021, where the final assessment for confirming the potential to achieve 1% energy efficiency reductions in 2022, 2023, and 2024 was presented.

Before diving into the assessment and its results, Mr. Durkee outlined the definitions and approach of the assessment. On slide 17, he detailed key definitions for the assessment, including what reasonable and achievable measures were, and expanded on the relevant cost-effectiveness calculations which include the Total Resource Cost (TRC) Test, and the Utility Cost Test (UCT). The equations for each of

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these were also included on slide 17. Mr. Durkee explained that the key difference between the TRC and the UCT tests.

Mr. Durkee then addressed the rapid assessment approach, outlined on slide 18. He expanded on how existing energy efficiency programs, new energy efficiency programs and measures, and new rate-based programs are assessed.

Programs and Measures Considered and Included in Expansion

Following this explanation of definitions and the rapid assessment process, Mr. Durkee expanded on the programs and measures that were included in the assessment.

First, he broke down the analysis for the Appliance Recycling Program, which provides free recycling for home appliances. He identified that there is room for new growth and participation for the program, in addition to the potential to include dehumidifiers and ACs in customer homes.

Next, he addressed the Residential HVAC Replacement Program, in which HVAC systems are replaced with electric heat pumps to produce significant energy efficiency savings. DESC provides a \$650 incentive for the replacement of an electric furnace. ICF anticipated that this would be well received by customers, but a 25% increase in the program is not achievable. On the other hand, he identified that a 10% increase in this measure is achievable. Referencing the graph on slide 20, Mr. Durkee explained that energy savings from program expansion would be slightly greater and would be slightly more expensive.

On the next slide, Mr. Durkee expanded on DESC's Neighborhood Energy Efficiency Program, which is targeted toward lower income customers. He explained that DESC noted that they will adopt the recommendation from Dr. Hill to double the participation in its service territory. The program seeks to replace furnaces with heat pumps, and the utility will cover the full cost of the appliance for lower income customers. Additionally, the utility will replace inefficient refrigerators at a full cost.

Following this, Mr. Durkee moved to slide 23 on the Home Energy Reports program. In this program, reports are sent to customers to identify how their energy consumption compares to their peers and describes opportunities to reduce their energy usage. Mr. Durkee explained that DESC plans to move out of an opt-out model to expand participation in the program. The goal is to increase the treatment group by about three to four times and identify a larger set of customers to send these reports to, while maintaining the opportunity for a control group.

He then referenced the graph on the slide and mentioned that some benchmarked utilities have much higher energy consumption savings because they have adopted the model to enroll 100% of their customers, without a control group. Alternatively, Mr. Durkee explained that there is an opportunity for 50-70% of the customer group to be enrolled while still allowing a treatment group.

Next, Mr. Durkee addressed the municipal lighting program on slide 24, which will upgrade or replace all municipal lighting that's available, per Dr. Hill's recommendation.

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Finally, the EnergyWise for Your Business program was discussed while referencing slide 25. Before going into detail on the analysis for this program, Mr. Durkee explained that nonresidential prescriptive programs vary significantly across the industry, so there is no reliable method to benchmark these programs. Instead, ICF performed a gap analysis which is described in further detail on the slides.

Mr. Durkee referenced the statistics on slide 25 and noted that DESC currently has a very successful non-residential program. Additionally, DESC added two new offerings for agriculture and energy management. Additionally, he expanded on an opportunity for DESC to focus on a "Cool Roof" incentive which is meant to help reflect heat and sunlight from roofs and reduces energy consumption. He determined that given DESC's territory, there could be more savings that could be incurred from these incentives.

Programs and Measures Considered and Not Included in Expansion

Mr. Durkee then described the programs and measures that were considered but not included in the expansion. He talked about the Small Business Direct Install program on slide 27 and noted that DESC has taken an aggressive path with these customers and targeted a 40% increase in participation in PY11 and PY12. Customer incentives were increased to 90% (up to \$6,000 per/project), and DESC is exploring additional measure types, including HVAC tune-ups. DESC is also exploring removing eligibility restrictions allow customers to have more than 6 premises. Dr. Hill recommended a 25% increase in the program, but analysis was not sequestered to this level. Unfortunately, it was determined that there was no defensible expansion of the program.

Finally, he described new programs and measures that were assessed. New measures included rebates for geothermal systems and heat pump clothes dryers. Unfortunately, geothermal system rebates showed that these would only incentivize free riders, and there was not enough evaluation history for heat pump clothes dryer incentives. It was recommended that DESC keep the latter in mind for future potential studies. New energy efficiency programs include the "My Energy Target" and LMI Locational Based DSM program, and pre-pay programs. Mr. Durkee noted that there were not enough reliable measures of the energy efficiency savings potential for these since there are limited applicable examples. Next, he described rate-based energy efficiency programs which include the peak time rebates, and time of use pricing. Unfortunately, these were not included as there was research that concluded a possible increase in consumption due to a "snapback" effect after the saving period. Finally, Mr. Durkee described the distributed energy resources which include off-road and on-road charging, and battery storage, but noted there were not expected energy efficiency savings here. Each of these were expanded on in slide 28.

Final DSM High Case Assessment Results

In conclusion, Mr. Durkee highlighted that there is a path for DESC to achieve 1% savings in the years 2022, 2023, and 2024. He noted that the majority of these savings come from the home energy reports program, as shown on the graph on slide 31 and provided both TRC and UTC results that showed some individual programs were not cost effective but the overall portfolio remained cost effective

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Model selection and Stakeholder Participation

Mr. Patrick Augustine of CRA introduced the section on Model Selection and Stakeholder Participation by outlining a set of key objectives for the current meeting and the subsequent meetings related to the topic. He noted that during today's meeting CRA and DESC will review the criteria for a capacity expansion model as described by the Commission, described the PLEXOS model, and explained how PLEXOS' attributes compared against the Commission criteria. He also indicated that no final decision has been made about the use of PLEXOS in future IRP filings and that The Advisory Group would be given the opportunity to provide input regarding model options and desired capabilities. This would ultimately provide a comprehensive comparison of options based on input from the Advisory Group, CRA, and DESC for a report back to the Commission. Mr. Augustine then summarized the Commission criteria for capacity expansion modeling and several documented Stakeholder concerns, as indicated on slide 34 of the presentation.

Mr. Eric Bell of DESC then provided an overview of DESC's current model implementation efforts with PLEXOS, as well as a review of IRP model requirements and how DESC views PLEXOS' ability to meet these needs. These considerations are indicated on slides 37 through 39. He also detailed the concerns that the Stakeholders expressed with regards to DESC's use of PLEXOS which are detailed on slides 40 and 41.

Mr. Augustine continued by describing how the Advisory Group will be able to provide greater input into the model selection process. He displayed slide 42 on which the Advisory Group is to provide feedback. He asked the Advisory Group to view the rows and verify if the team is missing any models on the provided table. Additionally, he asked the Advisory Group to review the columns and verify if any criteria should be added. Finally, he asked the Advisory Group to review the grouping and consolidation of the Commission's criteria. Mr. Augustine expressed that the Advisory Group should feel free to populate the cells in the matrix. If there are areas where certain models have deficiencies or strengths, he suggested that Advisory Group members note them in the matrix. He indicated that the Advisory Group has three weeks to provide input on this matrix.

Review Key Inputs from the Commission Order

Mr. Bell continued with the presentation on slide 43 to review key inputs from the 2020 IRP Commission Order. Details were included on the winter and summer reserve margins, additions of PV solar, gas prices, carbon price scenarios, and the peaking turbine modernization plans.

Mr. Bell then expanded on the resource plan ranking that this stakeholder planning process seeks to follow. He explained that previously, plans were ranked according to levelized cost NPVs. This time, DESC will identify the most reasonable and prudent plan by ranking the plans against multiple metrics across scenarios and under "expected conditions". The metrics that will be ranked by resource plan include levelized net present value, CO₂ emissions, clean energy (includes nuclear in addition to renewables), fuel cost resiliency, generation diversity, reliability, MiniMax regret analysis, and cost range analysis.

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Mr. Bell then opened the floor to accept questions.

All questions and answers from this session are documented in the Appendix Table 1. Questions 1 through 15 are addressed here.

2021 & 2022 IRP Updates (30 minutes)

**Stakeholder Process for 2021-2022 DESC IRP Updates, Pace, and Timing of Meetings
Preview Topics for Future Advisory Group sessions**

Here, Mr. Gary Vicinus began describing what to expect in meetings between now and the 2021 IRP update. He addressed several topics that were identified by the Commission Order that will be addressed, which are listed on slide 47 of the presentation. He identified that today, two issues were addressed and will be expanded on in future meetings: 1. Model selection for future IRP work, and 2. The DSM update. In subsequent meetings, the other topics listed on slide 47 will be discussed, resulting in a discussion for a recommended portfolio.

He then moved to slide 48 which displayed a timeline. He detailed the expected process between now and Q3 of 2021. He also described that the 2022 update will likely have a similar cadence but is still tentative depending on how well this process progresses.

Approach to building Stakeholder consensus through the Advisory Group

For the next four sessions, Mr. Vicinus expressed that the team intends to address each issue on the list multiple times on a topic-by-topic basis, with subsequent meetings to go further into detail so the Advisory Group can deliberate.

Next, he highlighted that the approach is meant to build consensus with the team members through the stakeholder process. He expressed that all issues will be prioritized, so there is the appropriate time for each while focusing on the most important issues first. The agenda for the following meeting will be full, but all the items will be covered in the four-meeting process even if the team does not get through all in a single meeting.

Mr. Vicinus noted that once the issues are prioritized by the Advisory Group, CRA will work with DESC to assist in framing the issues based on how these matters were addressed in other jurisdictions. CRA will likely describe these in the form of options. CRA will do research, lay out the options, and give homework to the Advisory Group to react to the information. Following this procedure, the information will be summarized in the following meeting.

Additionally, Mr. Vicinus outlined the stakeholder Q&A cycle. He explained that all the presentations will be uploaded to the webpage. The CRA and DESC team will leave the first week open, so if there are additional questions, the Advisory Group members can provide them on the website during this week. He noted that the team hopes that these questions will be submitted by the 23rd, if possible. He

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explained that the team will respond to the questions in writing and will continue to answer other questions over the next few weeks.

Mr. Vicinus then reiterated that the Advisory Group will have about three weeks to respond to the homework assignments. An email (DESC-IRP-Group@crai.com) has been created for the Advisory Group to send completed feedback assignments, and the CRA team will compile all the responses. This will give the team about three weeks to set the agenda, prioritize issues, create a full matrix for the model exercise, and provide any additional research to investigate for the next meeting.

Finally, Mr. Vicinus expanded what to expect at sessions two, three, and four. A full list of topics was provided on slide 51 for session 2 and slide 52 for sessions 3 and 4. He restated that he expects that there will be more time in these sessions that will be devoted to feedback and discussion.

Mr. Vicinus then opened the floor to accept any questions.

All questions and answers from this session are documented in the Appendix Table 1. Questions 16 and 17 are addressed here.

Next Meeting and Action Items (15 minutes)

Key topics for Advisory Group Meeting 2 and Stakeholder “homework” Website & QA logistics

Mr. Vicinus continued by describing the final action items for the next meeting. He displayed slide 55 which illustrates a screenshot of the stakeholder process website. He explained that if the Advisory Group would like to submit additional questions, they first need to register and fill in any appropriate information. Then, they can submit the questions. Additionally, he explained that the Advisory Group can view other materials as well, such as the presentation materials and appendix materials. Finally, he shared that the Advisory Group can share information by sending an email to DESC-IRP-Group@crai.com.

Mr. Vicinus then opened the floor to accept any additional questions.

All questions and answers from this session are documented in the Appendix Table 1. Questions 18 through 20 are addressed here.

Appendix

Table 1 – Stakeholder Advisory Group Meeting 1: Questions and Answers

	Question	From	Topic	Answer
1	Will the presentation slides be sent out to Stakeholders after the meeting?	Maggie Shober	Stakeholder Process & Schedule	All questions received during Stakeholder Sessions will be posted to the website. We intend to answer and post as many questions as possible within one week of the Stakeholder Advisory Group meeting and continue to post answers until all questions have been addressed.
2	Through your new building envelope focus, for how many homes per year do you plan to ensure that the home receives attic insulation plus leak sealing in the envelope plus duct sealing? Can you supply that number from your plan please?	Eddy Moore	DSM Forecast	During the current program year, PY11, DESC has forecasted that the Home Energy Check-up Tier 2 will provide building envelope incentives for 359 homes and the low-income program will provide the direct install of weatherization measures in 100 mobile homes.
3	Can you please provide the program cost effectiveness calculations, including all incentive and non-incentive cost components?	Eddy Moore	DSM	We addressed the incentive and non-incentive components for cost-effectiveness testing. "Incentive costs" include payments DESC makes in the form of rebates and incentives, instant rebated, and direct installation of measures in low-income communities and small businesses. "Non incentive costs" would include utility administration, third party implementation, marketing, and evaluation costs. Incentive costs are payments made to customers or contractors. See Slide 17 of the Stakeholder Advisory Materials from Session I for more information.

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4	Can you review all the models that were considered by DESC for use in the IRP, not just PLEXOS?	Maggie Shober	Selection of Capacity Expansion Model	DESC and the Stakeholder Advisory Group will be reviewing a wide range of models for potential use in future IRPs. See Slide 42 of the Stakeholder Advisory Materials from Session I for a full list of the models considered. Stakeholders will also have an opportunity to suggest additional models as part of the Session I homework.
5	When modeling DSM as resources, can PLEXOS and does DESC plan to use supply curves based on penetration rates, or does the model have to use a set cost similar to a generation asset?	Maggie Shober	Selection of Capacity Expansion Model & DSM Forecast	PLEXOS can model resources based on characteristics like energy and cost, but not specific types of DSM measures. Adding more than a few DSM resource options is likely to increase solver complexity greatly and reduce the ability to find a solution. Much like a turbine or combined cycle, there will be a limited set of DSM resource options and costs that represent entire suites of measures at different penetration levels. Currently, DESC plans to model DSM portfolios with different cost and reduction potentials such as 1%, 1.25%, 1.5%, etc. The model will have DSM candidate resources with progressive cost and energy reductions.
6	In the Session I Advisory Group Presentation, DESC explains that it has verified the capability to optimally retire units and replace them with efficient mix of resource additions. How was this verified and how were "optimal" retirement and "efficient mix" defined in this process?	Maggie Shober	IRP Resource and Retirement Plans	Optimal and most efficient mix are based solely on lowest NPV of all utility related costs. Reliability is handled outside the model. DESC has not independently verified the "optimal" results produced by PLEXOS, rather it is relying on the credibility of the model in the public domain at this point in time.

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7	Could Stakeholders get written follow-up on the ability to use the cost curve? How are you collaborating on the retirement studies?	Maggie Shober	IRP Resource and Retirement Plans	The DSM cost curve was not used in the IRP. No collaboration on retirement studies has taken place but this is expected to take place as we move forward with our studies over the next two years.
8	Slide 37 of the Session I Advisory Group Presentation states that inputs to PLEXOS can be an equation. Are inputs limited to vectors that change over time or can DSM cost and availability change dynamically based on the model's selection?	Maggie Shober	Selection of Capacity Expansion Model & DSM Forecast	The DSM inputs can be set as a constant or input as time series of values in a datafile. DESC will work with ICF to evaluate combinations of DSM measures and estimate the cost of those measures needed to achieve various levels of reductions in load. These load reductions will be modeled as load scenarios or DSM resources in PLEXOS as appropriate.
9	When does DESC anticipate deploying PLEXOS or another chosen model, the 2023 IRP?	Hamilton Davis	Selection of Capacity Expansion Model	We anticipate PLEXOS to be fully implemented by the 2022 IRP Update as directed in the Commission Order. If another model is selected, PLEXOS may have to be used as an interim solution for the 2022 IRP Update in which case the new model would be adopted for 2023 IRP.
10	It's my understanding that the prior characterization of energy efficiency savings relied on load shapes for a subset of measures in DESC's energy efficiency portfolio and that at least two of those measures had significant negative savings, meaning that somehow, they cause participants consume more energy not less. Is that the same shape that DESC will use to characterize energy efficiency for purposes of its Modified IRP filing?	Anna Sommer	DSM Forecast	The EE profile was developed for use in the ICF Planning Model for the development of the DSM Potential Study and 5-year Program plans. Six of the sixteen measures used in the EE profile, specifically heating and cooling measures, did have some negative impacts. The negative savings are asynchronous cycling of the baseline and upgrade system. Meaning, some hours when the baseline system is "off" the upgrade system would be "on" resulting in negative savings. However, overall, these measures do provide energy savings. It should be noted that the original heat gain/heat loss simulation model used in the development of these load

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				shapes were derived from an ICF developed tool, Beacon Residential Energy Modeling, which uses a DOE-2 engine.
11	On slide 44 of the Session I Stakeholder Advisory Group presentation, why is levelized cost a metric instead of net present value? Can you define all of the metrics on this slide, e.g. reliability?	Anna Sommer	Risk Metrics & Analysis	<p>This is an error on the slide, levelized cost should be replaced with levelized net present value. DESC defines the metrics on slide 44 of the Session I presentation as follows:</p> <ul style="list-style-type: none"> • Levelized Net Present Value: The Levelized Net Present Value metric is a comprehensive measure of the relative costs to customers of each of the fourteen resource plans over the 40-year period from 2020-2059. The comparison is based on the forty year levelized net present value of the incremental costs of each resource plan. The incremental costs include incremental operating costs, capital costs for new generation, incremental capital costs for ongoing operation and maintenance, and DSM costs. • CO2 Emissions: The CO2 Emissions metric compares the expected emissions from the fourteen-resource plan as forecasted at the end of 40-year period ending in 2049. • Clean Energy: The Clean Energy metric compares the fourteen resources plans based on how much energy they produced as forecasted at the end of 40-year period ending in 2049. • Fuel Cost Resiliency: The Levelized NPV Fuel Cost of generation plans as modeled in the Modified 2020 IRP fully captures fuel costs and anticipated changes in fuel costs over a 40-year planning horizon for each plan. As a result, the Levelized NPV Fuel Cost metric provides important data about how plans perform in the face of fuel price changes.

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				<ul style="list-style-type: none"> • Generation Diversity: Each of the resource plans modeled assumes the addition or retirement of different suites of generation sources. For that reason, each of the plans results in a different level of generation diversity at the close of the 40-year planning period. The generation diversity of each resource plan is ranked according to the percentage that the generation mix it creates is concentrated in any one type of generation asset. • Reliability Factors: DESC has identified a set of reliability factors that measure the generation types' ability to supply certain ancillary services, operating characteristics, and capabilities and meet certain locational considerations that support grid requirements in normal operations and in restoring power after storms or outages. • Mini-Max Regrets: The Mini-Max Regret analysis evaluates each resource plan against the lowest cost plan in each scenario and calculates the difference in the 40-year levelized NPV between the plans. The maximum change from the best plan in each scenario sets the max regret score for each resource plan. • Cost Range Analysis: The Cost Range Analysis evaluates the variation in the 40-year levelized NPV for each plan across the 27 scenarios that were modeled. The maximum variation for each plan sets the score.
12	Can DESC elaborate on the definition of "expected conditions?" as described in slide 44 of the Session I Stakeholder Working Group presentation?	Hamilton Davis	Scenario and Market Assumptions	Expected conditions reflect DESC's most likely view of the future. This view, for example, contemplates the low gas price scenario, energy efficiency reductions of 1% and a \$12/ton carbon price. Please see the 2020 Modified IRP, page 75 for additional details.

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13	What are Energy Exemplar's licensing terms? Are there any restrictions on use of the license, is it the same version of PLEXOS that DESC is using, do you still need a license to view the manual?	Anna Sommer	Selection of Capacity Expansion Model	We will need to discuss this question with Energy Exemplar to get a specific description of the licensing restrictions or lack thereof. Our presumption is that they are offering the same model as is being used by DESC.
14	In addition to capacity expansion modeling, will production cost modeling be performed to assess the portfolios identified by the capacity expansion model? If so, which production cost model?	Maggie Shober	Selection of Capacity Expansion Model	DESC and many utilities use PLEXOS for both capabilities. The LT module sets the optimal resource portfolio and then the ST module is used to determine the optimized production costs.
15	It sounds like Dominion Virginia does not currently use Partial Chronology in PLEXOS (please confirm), do they currently use Fitted or Sample Chronology and how many blocks per month do they use?	Anna Sommer	Selection of Capacity Expansion Model	DESC intends to use PLEXOS in a chronological configuration, if selected, through the Fitted Chronology methodology. DESC and Dominion VA are currently using between 6-12 blocks per day to solve PLEXOS.
16	Will all the questions be answered on the website, or just the ones not covered live? And when do you estimate those will be available on the website?	Maggie Shober	Stakeholder Process & Schedule	All questions received during Stakeholder Sessions will be posted to the website. We intend to answer and post as many questions as possible within one week of the Stakeholder Advisory Group meeting and continue to post answers until all questions have been addressed.
17	Will DESC send out the model requirements matrix included in the Session I Working Group materials? Will there be a follow up meeting to discuss the model selection?	Anna Sommer	Stakeholder Process & Schedule	Yes. We will upload the model requirements matrix in an editable format to the "Stakeholder Materials" section of the Stakeholder website on or around 2/24/21. Also, DESC intends to address Stakeholder feedback as well as our own findings regarding the model capabilities during Stakeholder Advisory Group Session II.

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18	What feedback is DESC seeking on the model requirements matrix?	Anna Sommer	Selection of Capacity Expansion Model	DESC is primarily seeking feedback on the evaluation criteria and the models to be evaluated, that is the columns and rows of the matrix. DESC also welcomes Stakeholder input on how the models presented rank against the defined criteria. Please see further details under the "Stakeholder Materials" page of the website.
19	Can DESC elaborate on the updated quantitative risk analysis and how it is applied to the company's preferred plan?	Hamilton Davis	Risk Analysis & Metrics	Please see the 2020 Modified IRP for further details. This should be publicly available prior to the next Stakeholder Advisory Group Meeting.
20	At any point during the stakeholder process will DESC make its modeling files available to stakeholders who have signed the NDA?	Anna Sommer	Miscellaneous / Other	Yes, DESC will make the modeling files available that are used to support future IRP filings at the time those future IRPs are filed.